REMARKS

In the Office Action, claims 1 - 28 were noted as pending in the application. Claims 1 - 4, 7 - 9, 11 - 13, 16 - 18, 21, 22, 25, and 26 were rejected, and claims 5, 6, 10, 14, 15, 19. 20, 23, 24, 27, and 28 were objected to as depending from a rejected base claim. By this amendment, claims 5, 10, 14, 19, 23, and 27 have been canceled; claims 1, 6, 7, 11, 15, 16, 20, 21, 24, 25, and 28 have been amended; and no claims have been added. Thus, claims 1 - 4, 6 - 9, 11 - 13, 15 - 18, 20 - 22, 24 - 26, and 28 are pending in the application. The rejections of the Office Action are traversed below.

Objection to Claims 7 - 10

In item 1, on page 2 of the Office Action, claims 7 - 10 are objected to because of a missing semicolon in independent claim 7, from which claims 8 - 10 depend. Claim 7 has been amended herein by adding a semicolon after the word, "sequence," in line 10. Withdrawal of the objection to claims 7 - 10 is respectfully requested.

Rejection of Claims 7 - 10 under 35 USC §112

In item 2, on page 2 of the Office Action, claims 7 - 10 were rejected under 35 USC §112, second paragraph, as being indefinite because of a trailing ";and" in independent claim 7, from which claims 8 - 10 depend. Claim 7 has been amended herein to replace the offending language with a period. Withdrawal of the rejection of claims 7 - 10 is respectfully requested.

Rejection of Claims 21 - 22 under 35 USC §103

In item 5, on pages 2 - 5 of the Office Action, claims 21 - 22 were rejected under 35 USC § 103 as being unpatentable over U.S. Patent 6,407,993 to Moulsley in view of U.S. Patent No. 5,995,499 to Hottinen et al. This rejection is respectfully traversed.

The Claimed Invention

Exemplary embodiments of the Applicant's invention are directed to a system and method for training a radio receiver. The system receives an initial portion of a transmitted data packet that contains one or more flags identifying a corresponding training sequence to

be selected by the receiver and indicating whether a training sequence is inserted in the data packet. A training sequence is received at the receiver according to the one or more flags, the training sequence being positioned within the data packet at a midamble location between the initial portion of the data packet and a first segment of the data packet. The receiver compares the received training sequence with the selected reference training sequence and generates one or more correction signals based on the comparison. Equalization parameters of the receiver are then adjusted based on the generated correction signals.

The Moulsley Patent

Moulsley discloses a system and method for transmitting and receiving radio signals between a primary station and plurality of secondary stations and for optimizing the method of transmission to the conditions surrounding the receiving environment (Moulsley at abstract; Col. 1, lines 53 - 58). Signals are received at the primary station from the secondary stations, and the quality of each of the received signals is estimated (Col. 2, lines 4 - 8). Based on the estimated quality of the received signals, modulation and coding schemes are selected at the primary station and are applied to the signals to be transmitted to the secondary stations (Col. 2, lines 8 - 12; Col. 4, lines 34 - 50). The modulated and coded signals are transmitted to each secondary station on a single downlink frame, the downlink frame including a frame structure having a header for the frame and a data burst for each modulated signal for each secondary station (Col. 2, line 66 - Col. 3, line 6; Col. 4, lines 6 - 11).

The Hottinen Patent

Hottinen et al. discloses a system and method for detecting received signals in the presence of co-channel interference (Hottinen et al. at abstract; Col 5, lines 19 - 21). A primary signal and at least one co-channel interfering signal are received on a same TDMA channel, with the received signals having different, but known, training sequences and having different transmission channels on a radio path (Col. 4, lines 41 - 55; Col. 5, lines 57 - 62). Transmission channel estimates of the primary signal and the interfering co-channel signal are determined based on the respective received training sequences (abstract; Col. 5, lines 50 - 54; Col. 6, lines 1 - 9). The primary signal is detected by utilizing the transmission channel estimates of the primary signal and the interfering co-channel signal (Col. 6, line 58 - Col. 7,

line 9).

The Claimed Invention is Patentably Distinguishable Over the Cited Documents

The Applicant's claimed invention is directed to a system and method for training a radio receiver, including a transmitter having a processor operable to insert at least one flag to identify a corresponding reference training sequence to be selected by the receiver and to indicate whether a training sequence is inserted within data packets to be transmitted, the processor inserting the training sequence at a midamble of the data packets between an initial portion and a first segment; a modulator operative to apply at least one modulation scheme to the data packets prior to transmission; and transmission means to transmit the modulated data packets, wherein the initial portion is transmitted having a first modulation scheme applied, and the midamble is transmitted having a second modulation scheme applied, the second modulation scheme also being applied to the first segment, and any subsequent segments received within the data packet.

As admitted by the Office Action on page 7, Moulsley and Hottinen et al., whether taken singly or in combination, fail to disclose the initial portion being transmitted having a first modulation scheme applied, and the midamble being transmitted having a second modulation scheme applied, wherein the second modulation scheme is also applied to the first segment, and any subsequent segments received within the data packet, as recited in independent claim 21 as amended herein.

While the Office Action asserts on page 4 that it would have been obvious to combine the teachings of Moulsley and Hottinen et al. to allegedly teach the features of independent claim 21, the Office Action has failed to cite to either Moulsley or Hottinen et al. as teaching a motivation or suggestion to make the combination suggested by the Office Action. Further, the Office Action admits on page 7 that the features disclosed in dependent claim 23, which has been added to independent claim 21 herein, are allowable. Accordingly, amended independent claim 21 is allowable, as are any claims depending from claim 21.

Therefore, the Applicant respectfully requests the rejection of claims 21 and 22 be withdrawn and that the objection to claim 24, which now depends directly from claim 21, also be withdrawn.

Rejection of Claims 1 - 4, 7 - 9, 11 - 13, 16 - 18, 25, and 26 under 35 USC §103

In item 6, on pages 5 - 7 of the Office Action, claims 1 - 4, 7 - 9, 11 - 13, 16 - 18, 25, and 26 were rejected under 35 USC § 103 as being unpatentable over Moulsley in view of Hottinen et al. and further in view of the admitted prior art. This rejection is respectfully traversed.

The Claimed Invention is Patentably Distinguishable Over the Cited Documents

The Applicant's claimed invention is directed to a system and method for training a radio receiver. In particular, and reciting independent claim 1 as an example, there is claimed a method of training a radio receiver, including:

receiving an initial portion of a data packet at the receiver, the initial portion containing at least one flag to identify a corresponding reference training sequence to be selected by the receiver and to indicate whether a training sequence is inserted in the data packet;

receiving the training sequence at the receiver according to the at least one flag, the training sequence being positioned within the data packet at a midamble between the initial portion and a first segment of the data packet;

comparing, at the receiver, the received training sequence with the selected reference training sequence; and

generating one or more correction signals based on the results of the comparison,

wherein the initial portion is received having a first modulation scheme applied and the midamble is received having a second modulation scheme applied, the second modulation scheme also being applied to the first segment, and any subsequent segments received within the data packet.

As admitted by the Office Action on page 7, Moulsley, Hottinen et al., and the admitted prior art, whether taken singly or in combination, fail to disclose the initial portion being received having a first modulation scheme applied, and the midamble being received having a second modulation scheme applied, wherein the second modulation scheme is also applied to the first segment, and any subsequent segments received within the data packet, as recited in independent claim 1 as amended herein.

While the Office Action asserts on page 4 that it would have been obvious to combine the teachings of Moulsley and Hottinen et al. to allegedly teach the features of independent claim 21, the Office Action fails to assert any suggestion or motivation to combine the features of Moulsley, Hottinen et al., and the prior art as disclosed in the specification at page 3, lines 3 - 13 to render obvious the features recited in independent claim 1. While the Office Action in item 6, on page 5 of the Office Action, attempts to incorporate "the same analogy in claim 21," it is unclear what analogy is being relied upon. Additionally, the rejection of claim 21 did not rely on the prior art disclosed on page 3 of the specification for the rejection of the claims under 35 USC §103, as does the present rejection of independent claim 1; so any Mouslsley/Hottinen et al. analogy is insufficient as a basis of a rejection of claim 1 without also incorporating the prior art disclosure on page 3 of the rejection and a citation to a teaching that provides a motivation for making the three-way combination of Mouslsley, Hottinen, et al., and the disclosed prior art, as suggested by the Office Action, to allegedly render claim 1 obvious.

Further, the Office Action admits on page 7 that the features disclosed in dependent claim 5, which has been added to independent claim 1 herein, are allowable. Accordingly, amended independent claim 1 is allowable, as are any claims depending from claim 1. Therefore, the Applicant respectfully requests the rejection of claims 1 - 4 be withdrawn and that the objection to claim 6, which now depends directly from claim 1, also be withdrawn.

Independent claims 7, 11, 16, and 25 have been rejected in the Office Action under the same combination of art and the same reasoning as presented in the Office Action for rejection independent claim 1. For the same reasons as discussed above regarding claim 1, the Applicant respectfully submits that amended independent claims 7, 11, 16, and 25 are allowable, as are all the claims that depend from these independent claims. Therefore, the Applicant respectfully requests the rejection of claims 7 - 9, 11 - 13, 16 - 18, and 25 - 26 be withdrawn and that the objection to claims 15, 20, and 28, which depend respectively from independent claims 11, 16, and 25, also be withdrawn.

Allowable Subject Matter

The Applicant notes with appreciation that the Office Action indicated in item 7, on page 7 of the Action, that claims 5, 6, 10, 14, 15, 19, 20, 23, 24, 27, and 28 would be allowable if rewritten in independent form, including all the limitations of the base claim and

any intervening claims.

Summary

It is submitted that none of the documents, either taken alone or in combination, teach the claimed invention. Thus, claims 1 - 4, 6 - 9, 11 - 13, 15 - 18, 20 - 22, 24 - 26, and 28 are deemed to be in a condition suitable for allowance. Reconsideration of the claims and an early Notice of Allowance are earnestly solicited. If any fees are required in connection with this Amendment, please charge the same to our Deposit Account No. 02-4800.

Respectfully submitted,

Burns, Doane, Swecker & Mathis, L.L.P.

By: _____
William N. Hughet
Reg. No. 44,481

P.O. Box 1404
Alexandria, Virginia 22314-0404
Telephone: (703) 836-6620
Facsimile: (703) 836-2021

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